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By Elizabeth A. Weland

PATENT

Attorney Docket No. SIC-08-006-1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Owner: MBI, Co., Ltd.

Inventor: Moon-Soo Yoo

Reexamination Control No: 95/001,051

Filed: June 6, 2008

U.S. Patent: 6,478,711 B2

Issued: November 12, 2002

For: APPARATUS FOR CHANGING SPEED  
OF BICYCLES

Examiner: Matthew Graham

Art Unit: 3993

NOTICE OF APPEAL TO THE U.S. COURT  
OF APPEALS FOR THE FEDERAL CIRCUIT  
(INTER PARTES REEXAMINATION)  
(37 C.F.R. §§ 1.983, 1.302)

**Via Express Mail**

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Director:

**I. NOTICE**

Third Party Requester Shimano, Inc. hereby provides Notice of Appeal to the U.S. Court of Appeals for the Federal Circuit under 35 U.S.C. §§ 141-142 and 37 CFR §1.983(a) from the decision of the Board of Patent Appeals and Interferences dated December 19, 2011.

**II. DESIGNATION OF APPELLANTS:**

The appellant in this appeal is Shimano, Inc.

**III. COPY OF DECISION APPEALED FROM:**

Attached is a copy of the December 19, 2011 Board decision.

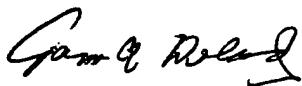
**IV. COPY TRANSMITTED TO FEDERAL CIRCUIT CLERK:**

Simultaneously herewith, three copies of this Notice of Appeal together with the fee prescribed by Rule 52 of the rules of the Federal Circuit (\$450.00) are being transmitted to the clerk of the Federal Circuit in accordance with Federal Circuit Rule 15(a)(1) to the following address via Express Mail:

Clerk  
U.S. Court of Appeals for the Federal Circuit  
717 Madison Place, N. W.  
Room 401  
Washington, DC 20439

Date: February 16, 2012

Respectfully submitted,



James A. Deland  
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**CERTIFICATE OF SERVICE**

The undersigned hereby certifies that a copy of the paper entitled NOTICE OF APPEAL TO THE U.S. COURT OF APPEALS FOR THE FEDERAL CIRCUIT (INTER PARTES REEXAMINATION) (37 C.F.R. §§ 1.983, 1.302) has been served in its entirety on the patent owner by mailing a copy of the paper by first class mail. The name and address of the person served is:

Mr. Richard Wydeven  
ROTHWELL, FIGG, ERNST & MANBECK, P.C.  
1425 K Street, N.W.  
Suite 800  
Washington, DC 20005  
Date of Service: February 16, 2012

Date: February 16, 2012

Respectfully submitted,



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
95/001,051	06/06/2008	6,478,711	3885-0101	2787
6449	7590	12/19/2011	EXAMINER	
ROTHWELL, FIGG, ERNST & MANBECK, P.C.				GRAHAM, MATTHEW C
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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SHIMANO, INC.  
Requester, Respondent, and Cross-Appellant

v.

Patent of MBI CO., LTD.  
Patent Owner, Appellant, and Cross-Respondent

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Appeal 2011-010922  
Reexamination Control 95/001,051  
Patent 6,478,711 B2  
Technology Center 3900

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Before ROMULO H. DELMENDO, JEFFREY B. ROBERTSON, and  
DANIEL S. SONG, *Administrative Patent Judges*.

DELMENDO, *Administrative Patent Judge*.

DECISION ON APPEAL

Appeal 2011-010922  
Reexamination Control 95/001,051  
Patent 6,478,711 B2

MBI Co., Ltd. (hereinafter “Patent Owner”) appeals under 35 U.S.C. §§ 134(b) and 315(a)(1) from the Examiner’s final rejection of claims 1-8 and 11-25 in the reexamination of United States Patent 6,478,711 B2 (hereinafter “the ‘711 Patent”).<sup>1,2</sup> Shimano, Inc. (hereinafter “Requester”) is a party to the Patent Owner’s appeal under 35 U.S.C. § 315(b)(2).<sup>3</sup>

The Requester cross-appeals under 35 U.S.C. §§ 134(c) and 315(b)(1) from the Examiner’s refusal to enter certain proposed rejections against claims 1-8 and 11-15.<sup>4</sup> The Patent Owner is a party to this cross-appeal under 35 U.S.C. § 315(a)(2).<sup>5</sup>

We have jurisdiction under 35 U.S.C. §§ 6(b), 134, and 315.

We AFFIRM-IN-PART and REVERSE-IN-PART as to the Patent Owner’s appeal. We do not reach the merits of the Requester’s appeal.

#### STATEMENT OF THE CASE

The current reexamination was ordered based on a Request for *Inter Partes* Reexamination filed June 6, 2008 (Order Granting Request for *Inter Partes* Reexamination mailed August 22, 2008). We understand that the

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<sup>1</sup> The ‘711 Patent issued to Moon-Soo Yoo on November 12, 2002, based on Application 09/735,770 filed on December 13, 2000.

<sup>2</sup> See the Patent Owner’s Appeal Brief filed on September 24, 2010, which was corrected on November 1, 2010 (hereinafter “PO App. Br.”); see Right of Appeal Notice mailed June 17, 2010 (hereinafter “RAN”).

<sup>3</sup> See the Requester’s Respondent Brief filed on November 30, 2010 (hereinafter “Req. Resp. Br.”).

<sup>4</sup> See the Requester’s Appeal Brief filed September 24, 2010 (hereinafter “Req. App. Br.”); see RAN.

<sup>5</sup> See the Patent Owner’s Respondent Brief filed October 25, 2010 (hereinafter “PO Resp. Br.”).

invention was the subject of various legal proceedings in China, Europe, and Japan (PO App. Br. 19, FN 3; Req. Resp. Br. 6, 8).

We heard oral arguments from both parties on November 16, 2011, a written transcript of which will be entered into the electronic record in due course.

The '711 Patent states that the invention relates to an apparatus for changing speeds in bicycles and other vehicles that use sprockets and chains (col. 1, ll. 6-8). According to the inventor, "the bicycle or other vehicle [provided with the apparatus] has a good appearance, changing speed is convenient, the effect occurs immediately after a speed-changing operation, little noise occurs when changing speed, and the number of speed level steps may easily be increased" (col. 1, ll. 10-15).

Claims 1, 6, 7, and 21-23 read as follows (Claims App'x, PO App. Br. 45, with bracketing and underlining showing deletions and additions relative to the original patent claims):

1. An apparatus for changing the speed of a bicycle having a rear driving wheel, the apparatus comprising:
  - a driven sprocket for receiving the driving force of a driving sprocket;
  - a speed controlling portion, comprising:
    - a carrier fixed to one side of the driven sprocket, a plurality of planetary gears within said carrier, each of said planetary gears having at least a first tooth portion and a second tooth portion;
    - at least two sun gears, each having ratchet-teeth along its inner circumference, one of said sun gears being engageable with said first tooth portion of each of said planetary gears and a second of said

sun gears being engageable with said second tooth portion on each of said planetary gears;  
a ring gear engageable with the planetary gears;  
an output portion, comprising:  
a hub shell for transferring the driving force to the rear wheel of the bicycle by means of the carrier and the ring gear;  
a clutch means, mounted between the carrier and hub shell and the ring gear and the hub shell to selectively mediate the driving force; and  
a speed-change controlling portion, comprising:  
a hub shaft having a pawl-positioning portion;  
at least two sets of pawls engageable with and releasable from the ratchet-teeth of the sun gears;  
a pawl-controlling ring for controlling the position of the pawls;  
a transforming disk having a groove along its outer circumference, and a hooking portion on said outer circumference, said hooking portion adapted to transform the position of the pawl-controlling ring through a mediating portion;  
a spring for restoring the position of the transforming disk to its original position; and  
a spacing portion enabling the transforming disk to rotate freely.

6. An apparatus of claim 1, wherein each of the pawls comprises:

a sag portion positioned inside of the pawl-controlling ring; and  
a stopper portion engageable with and releasable from the ratchet-teeth at the inner circumference of the sun gear.

7. The apparatus of claim 6, wherein those pawls positioned relatively far from the pawl-controlling ring further comprise an extended portion that is thinner than at least one of the [pawl bodies] sag portion and the stopper portion.

21. The apparatus of claim 7, wherein

those pawls positioned relatively near to the pawl-controlling ring are engageable with and releasable from the ratchet-teeth of one of the at least two sun gears positioned relatively near to the pawl-controlling ring;

those pawls positioned relatively far from the pawl-controlling ring are engageable with and releasable from the ratchet-teeth of one of the at least two sun gears positioned relatively far from the pawl-controlling ring;

the extended portion of those pawls positioned relatively far from the pawl-controlling ring extend through the sun gear positioned relatively near to the pawl-controlling ring and connects the stopper portion with the sag portion; and

the engagement and release of those pawls positioned relatively far from the pawl controlling ring with the sun gear positioned relatively far from the pawl-controlling ring does not interfere with the rotation of the sun gear positioned relatively near to the pawl-controlling ring.

22. The apparatus of claim 6, wherein:

at least part of the stopper portion of at least one of the pawls is disposed within an annulus defined between the hub shaft and the inner circumference of an associated one of the sun gears, and

at least part of the sag portion of the pawl extends axially beyond the annulus defined between the hub shaft and the inner circumference of the associated sun gear.

23. The apparatus of claim 1, wherein each of the pawls comprises:

a teeth-engaging portion adapted to be selectively engageable with the ratchet-teeth of an associated one of the sun gears and disposed within an annulus defined between the hub shaft and the inner circumference of the associated sun gear, and

a ring-engaging portion adapted to be selectively engageable with the pawl-controlling ring and disposed within an annulus defined between the hub shaft and an inner circumference of the pawl-controlling ring, and wherein the ring-engaging portion extends axially beyond the annulus defined between the hub shaft and the inner circumference of the associated sun gear.

The Examiner relied upon the following as evidence of unpatentability (Examiner's Answer mailed November 19, 2010, incorporating by reference the Right of Appeal Notice mailed June 17, 2010, hereinafter "RAN"):

Nagano	5,078,664	Jan. 7, 1992
Matsuo	5,785,625	July 28, 1998
Huang	5,855,530	Jan. 5, 1999

In its cross-appeal, the Requester relied upon the following additional evidence of unpatentability (Req. App. Br. 5):

Rohloff	6,048,287	Apr. 11, 2000
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*The Patent Owner's Appeal*

The Examiner rejected claims 1-8 and 11-25 as follows:<sup>6</sup>

- I. Claims 1-8 and 13-15 under 35 U.S.C. § 102(b) as anticipated by Nagano (RAN 2-3);
- II. Claim 11 under 35 U.S.C. § 103(a) as unpatentable over Nagano (RAN 4);
- III. Claim 12 under 35 U.S.C. § 103(a) as unpatentable over Nagano in view of Matsuo (RAN 4);
- IV. Claims 1-7 and 11-15 under 35 U.S.C. § 103(a) as unpatentable over Matsuo in view of Huang and Nagano (RAN 5-6);
- V. Claims 1-7, 11, and 13-15 under 35 U.S.C. § 103(a) as unpatentable over Huang in view of Nagano (RAN 6-8);
- VI. Claim 12 under 35 U.S.C. § 103(a) as unpatentable over Huang in view of Nagano and Matsuo (RAN 8-9);
- VII. Claims 1-8 and 11-15 under 35 U.S.C. § 103(a) as unpatentable over Matsuo in view of Nagano (RAN 9);
- VIII. Claim 21 under 35 U.S.C. § 112, ¶ 2, as indefinite (RAN 10);

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<sup>6</sup> In our opinion below, we do not necessarily address the Examiner's rejections in the same sequential order as presented in the Right of Appeal Notice.

- IX. Claim 7 under 35 U.S.C. § 112, ¶ 1, as failing to comply with the written description requirement (RAN 10-11);
- X. Claim 7 under 35 U.S.C. § 314(a) as enlarging the scope of the claims of the '711 Patent (RAN 11-12);
- XI. Claims 22 and 23 under 35 U.S.C. § 112, ¶ 1, as failing to comply with the written description requirement (RAN 12-13);
- XII. Claims 16-20, 24, and 25 under 35 U.S.C. § 102(b) as anticipated by Nagano (RAN 13-14);
- XIII. Claim 23 under 35 U.S.C. § 103(a) as unpatentable over Nagano (RAN 14);
- XIV. Claims 16-20 and 22-25 under 35 U.S.C. § 103(a) as unpatentable over Matsuo in view of Huang and Nagano (RAN 15);
- XV. Claims 16-20 and 22-25 under 35 U.S.C. § 103(a) as unpatentable over Huang in view of Nagano (RAN 15); and
- XVI. Claim 22 under 35 U.S.C. § 102(b) as anticipated by Nagano (RAN 15).

*The Requester's Cross-Appeal*

The Examiner refused to enter the following grounds of rejection proposed by the Requester (Req. App. Br. 3-4; RAN 10, 16-17):

- I. Claims 1-8 and 11-15 under 35 U.S.C. § 103(a) as unpatentable over Matsuo in view of Nagano and Rohloff;
- II. Claim 4 under 35 U.S.C. § 103(a) as unpatentable over Nagano in view of Huang; and
- III. Claims 16-20, 22, 24, and 25 under 35 U.S.C. § 103(a) as unpatentable over Nagano.

THE PATENT OWNER'S APPEAL

REJECTION VIII – INDEFINITENESS (CLAIM 21)

ISSUE

The Examiner concluded that claim 21, which was added during reexamination, is indefinite because “[t]he terms ‘relatively far’ and ‘relatively near’ are non-limiting and confusing” (RAN 10).

The Requester agrees with the Examiner and asserts that the “terms constitute one term of degree modified by a second term of degree” (Req. Resp. Br. 12, which incorporates by reference, *inter alia*, its Comments filed November 21, 2008, hereinafter “Req. Comments”). The Requester questions: “Even if Pawl A is closer to the pawl-controlling ring than Pawl B, is Pawl A ‘relatively near’ to the pawl controlling ring if Pawl A contacts the pawl controlling ring? If Pawl A is one millimeter from the pawl controlling ring? One centimeter? One meter? One kilometer?” (Req. Comments at 8).

The Patent Owner argues:

One of ordinary skill in the art would understand that, if one set of pawls is described as being “relatively near” to the pawl-

controlling ring (e.g., pawls 421), as contrasted with another set of pawls that is described as being “relatively far” from the same pawl-controlling ring (e.g., pawls 422), the comparative terms (e.g., “relatively near” and “relatively far” describe positions of the pawls with respect to each other, i.e., the relatively near set of pawls is closer to the pawl-controlling ring tha[n] the other set of stopper pawls.

(PO App. Br. 27).

Thus, the issue arising from these contentions is:

(1) Did the Examiner demonstrate that one skilled in the relevant art would be unable to understand the terms “relatively near” and “relatively far” when read in light of the Specification and Drawings of the ‘711 Patent?

#### FINDINGS OF FACT (“FF”)

1. Figure 7 of the ‘711 Patent is reproduced below:

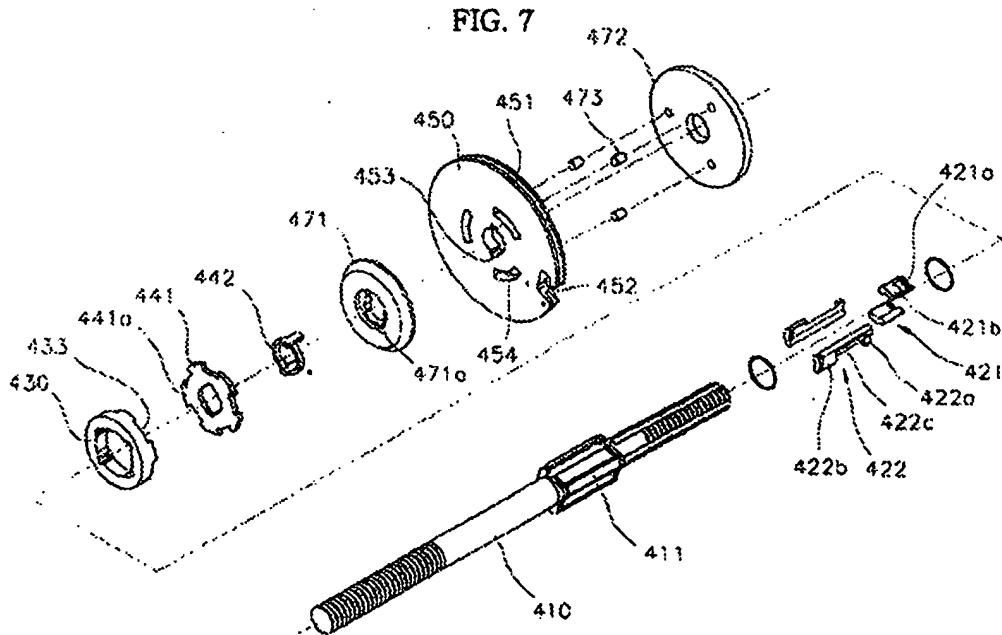


Figure 7 above depicts an exploded perspective view of the speed-change controlling portion of the claimed invention, wherein the portion includes a pawl-controlling ring 430 and pawls 421 and 422 (col. 3, ll. 34-35; col. 4, ll. 42-52).

2. Figure 3 of the '711 Patent is reproduced below:

FIG. 3

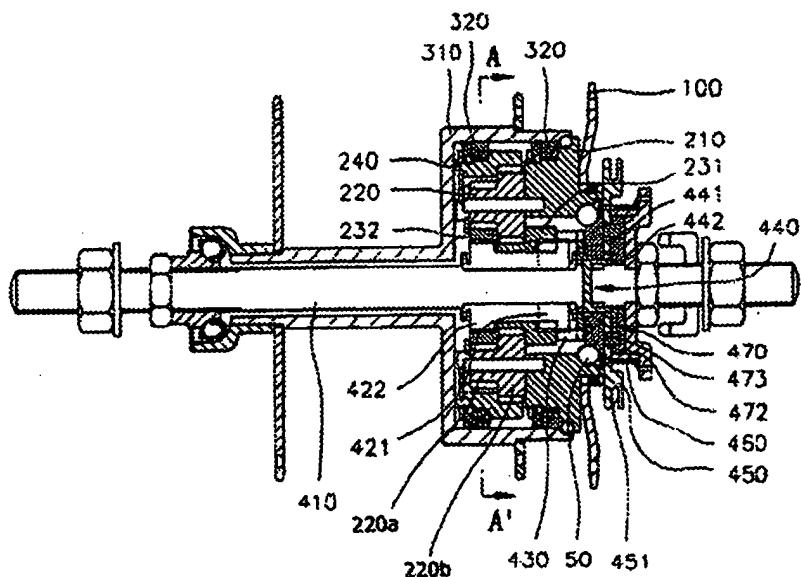


Figure 3 above depicts a sectional view of the speed-changing apparatus of the invention (col. 3, ll. 27-28).

3. Figure 6 of the '711 Patent is reproduced below:

FIG. 6

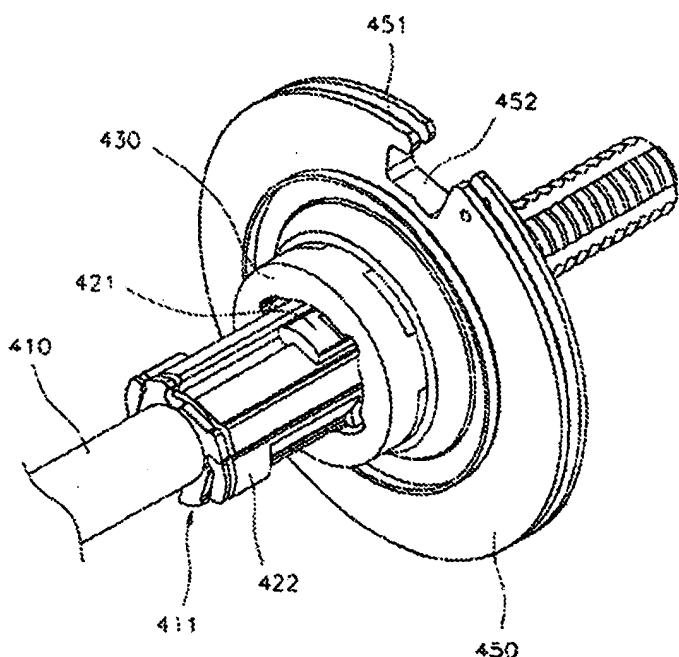


Figure 6 above depicts a perspective view of the speed-changing controlling portion of the invention (col. 3, ll. 32-33).

4. The '711 Patent further explains that the pawl 422 "is positioned relatively far from the pawl-controlling ring 430" (col. 4, ll. 49-50), while the pawl 421 "is near the pawl-controlling ring 430" (col. 4, ll. 53-56).

### PRINCIPLES OF LAW

“[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

“The legal standard for definiteness is whether a claim reasonably apprises those of skill in the art of its scope.” *In re Warmerdam*, 33 F.3d 1354, 1361 (Fed. Cir. 1994).

### ANALYSIS

We agree with the Patent Owner that the rejection is not well founded (PO App. Br. 27). The plain language of claim 21, when read in light of the Specification and Drawings of the ‘711 Patent, would have reasonably informed one skilled in the relevant art that the phrases “relatively near” and “relatively far” are not being used as terms of degree to broaden the scope of an element, but as comparative terms to limit the relative positioning of the two sets of pawls with respect to the position of the pawl-controlling ring (FF 1-4). Thus, one skilled in the relevant art would understand that a set of pawls positioned closer to the pawl-controlling ring relative to another set of pawls to any degree would be considered “relatively near to the pawl-controlling ring.” Conversely, the set of pawls positioned further away from the pawl-controlling ring relative to the “relatively near” set of pawls would be considered “relatively far from the pawl-controlling ring.”

In view of the above, the Requester’s question as to whether a first set of pawls, which is situated closer to the pawl-controlling ring than a second set of pawls, would be considered “relatively near” if spaced from the pawl-

controlling ring at a distance of “[o]ne kilometer,” fails to take into account how one skilled in the art of apparatuses for changing the speed of a bicycle would have understood the terms in the proper context of the invention described in the Specification and Drawings.

For these reasons, we cannot uphold the rejection of claim 21 on this ground.

#### REJECTION IX – LACK OF WRITTEN DESCRIPTION (CLAIM 7)

##### ISSUE

The Examiner found that original claim 7 recited “wherein those pawls positioned relatively far from the pawl-controlling ring further comprise an extended portion that is thinner than the pawl bodies” (RAN 11). That is, the original disclosure (e.g., Figure 7 and col. 4, ll. 49-52) required the “extended portion” to be thinner than both the sag portion and the stopper portion (RAN 11). But according to the Examiner, claim 7 has been broadened by amendment to read on “an extended portion (422c) that only has to be thinner than one of the sag portion or the stopper portion” in violation of the written description requirement of 35 U.S.C. § 112, ¶ 1 (RAN 11).

The Requester’s position is consistent with that of the Examiner (Req. Resp. Br. 19-20).

The Patent Owner contends that the amendment to claim 7 is supported by the description in the ‘711 Patent at, *inter alia*, column 4, lines 2-52 and Figures 3, 6, and 7 (PO App. Br. 28).

Thus, the issue arising from these contentions is:

(2) Did the Patent Owner show that the disclosure of the '711 Patent, as originally filed, reasonably conveys to one skilled in the relevant art that the inventor had possession of the subject matter recited in amended claim 7, including the limitation "the pawl-controlling ring further comprise[s] an extended portion that is thinner than at least one of the [pawl bodies] sag portion and the stopper portion?"

#### ADDITIONAL FINDING OF FACT

5. The '711 Patent states that the pawl 422 "further comprises an extended portion 422c that is thinner than the pawl body, so that it prevents the pawl 422 from engaging other elements" (col. 4, ll. 48-52).

#### PRINCIPLE OF LAW

To satisfy the written description requirement of 35 U.S.C. § 112, ¶1, the disclosure of the application as originally filed must reasonably convey to one skilled in the relevant art that the inventor, as of the filing date of the original application, had possession of the claimed invention. *In re Alton*, 76 F.3d 1168, 1172 (Fed. Cir. 1996).

#### ANALYSIS

We are in complete agreement with the Examiner on this issue (RAN 11). Original claim 7 recited that the "extended portion . . . is thinner than the pawl bodies." Amended claim 7, however, recites that "the pawl-controlling ring further comprise[s] an extended portion that is thinner than

at least one of the [pawl bodies] sag portion and the stopper portion.” Thus, as pointed out by the Examiner (RAN 11), amended claim 7 now reads on an embodiment in which the “extended portion” is thicker than the “sag portion” but thinner than the “stopper portion.” According to the Examiner, “[t]here is no description o[r] depiction in Yoo [‘711 Patent] that an extended portion (422c) could be thinner than stopper portion (422b) and thicker than sag portion (422a)” (RAN 11). Specifically, the Examiner found that such an unsupported embodiment would be contrary to the original disclosure regarding the purpose of the thinner extended portion, i.e., to prevent pawl 422 from engaging other elements (FF 1-3, 5).

The Patent Owner has not shown that the Examiner’s factual findings are in error. While the Patent Owner points generally to column 4, lines 2-52 and Figures 3, 6, and 7 of the ‘711 Patent for support for the broader subject matter (PO App. Br. 28-29; FF 1-3), the Patent Owner has offered no reasonably specific explanation as to how these disclosures provide written description support for the broader subject matter now encompassed by amended claim 7, including an embodiment in which the “extended portion” is thicker than a “sag portion” but thinner than a “stopper portion.”

For these reasons, we discern no error in the Examiner’s finding that amended claim 7 violates 35 U.S.C. §§ 112, ¶ 1.

#### REJECTION X – ENLARGEMENT (CLAIM 7)

##### ISSUE

The Examiner asserted that the amendment of claim 7 impermissibly broadened the scope of the claims in the original ‘711 Patent (RAN 12).

The Requester's position is consistent with that of the Examiner (Req. Comments at 20).

The Patent Owner argues that the Examiner's rejection is in error "because claim 7, as amended, more clearly recites the original scope of the claims in the Yoo ['711] patent and does not alter the scope of those claims" (PO App. Br. 29).

Thus, the issue arising from these contentions is:

(3) Did the Examiner demonstrate that amended claim 7 impermissibly broadens the scope of the claims in the original '711 Patent?

#### **ADDITIONAL FINDING OF FACT**

6. Claim 7 depends from claim 6, which in turn depends from claim 1.
7. Claim 1 is an original claim in the '711 Patent.

#### **PRINCIPLES OF LAW**

A "claim is enlarged if it includes within its scope any subject matter that would not have infringed the original patent." *In re Freeman*, 30 F.3d 1459, 1464 (Fed. Cir. 1994). "The test for when a new claim enlarges the scope of an original claim . . . is the same as that under the two-year limitation for reissue applications adding enlarging claims under 35 U.S.C. § 251, last paragraph." *Id.*

## ANALYSIS

We agree with the Patent Owner's assertion that amended claim 7 does not enlarge the scope of the *claims* in the original '711 Patent. In reaching the conclusion that the amendment to claim 7 enlarges the scope of the *claims* of the patent, the Examiner merely compared the scope of amended claim 7 to the scope of original claim 7 (RAN 12). That comparison is insufficient to demonstrate that amended claim 7 impermissibly enlarges the scope of the *claims* in the original '711 Patent. While amended claim 7 may violate the written description requirement of 35 U.S.C. § 112, ¶ 1, the scope of amended claim 7, which ultimately depends from claim 1 through intervening claim 6, is fully subsumed within the scope of its base claim (claim 1 of the original patent) (FF 6, 7). *See* MPEP § 2658, III. A (Rev. 7, July 2008) ("A claim presented in a reexamination proceeding enlarges the scope of the claims of the patent being reexamined where the claim is broader than *each and every* claim of the patent.") (original bolding removed; italics added); MPEP § 1412.03 ("Because a dependent claim is construed to contain all the limitations of the claim upon which it depends, claim 2 must be at least as narrow as claim 1 and is thus not a broadened reissue claim.").

Therefore, we cannot affirm this rejection.

REJECTION XI – WRITTEN DESCRIPTION (CLAIMS 22 & 23)

ISSUES

With respect to claim 22, the Examiner asserted that claim 22 “sets forth an embodiment wherein part of the stopper portions . . . can be disposed outside of the annulus and that part of the sag portion . . . can be disposed inside of the annulus” (RAN 13). According to the Examiner, such an embodiment is contrary to the original disclosure, which “only discloses the entire stopper portion (421b, 422 b) disposed within the annulus and the entire sag portion (421a, 422a) disposed outside of the annulus” (RAN 13). With respect to claim 23, the Examiner asserted that “[t]here is no support in the specification for selective engagement between the ring-engaging portions of pawls (421,422) and the pawl-controlling ring (430)” (RAN 13).

The Requester’s position is consistent with that of the Examiner (Req. Resp. Br. 13).

With respect to claim 22, the Patent Owner contends that:

[w]hile the explicit disclosure of [the ‘711 Patent] may illustrate an embodiment wherein the entirety of the recited elements are in the recited locations, one having ordinary skill in the art would readily understand that minor variations on the illustrated embodiments are also within the scope of the invention and were within the inventor’s possession at the time the application was filed.

(PO App. Br. 30).

With respect to claim 23, the Patent Owner argues that Figures 9A through 9C show that the pawls include a ring-engaging portion that is selectively engageable with the pawl-controlling ring (PO App. Br. 31).

Thus, the issues arising from these contentions are:

(4) Does the original disclosure of the '711 Patent reasonably convey to one skilled in the relevant art that the inventor had possession of the subject matter of claim 22 including an embodiment in which part of the stopper portions are disposed outside the annulus and part of the sag portions are disposed inside the annulus?

(5) Does the original disclosure of the '711 Patent reasonably convey to one skilled in the relevant art that the inventor had possession of the subject matter recited in claim 23 in which the ring-engaging portion of each of the pawls is adapted to be selectively engageable with the pawl-controlling ring?

#### ADDITIONAL FINDINGS OF FACT

8. Figure 9A of the '711 Patent is reproduced below:

FIG. 9A

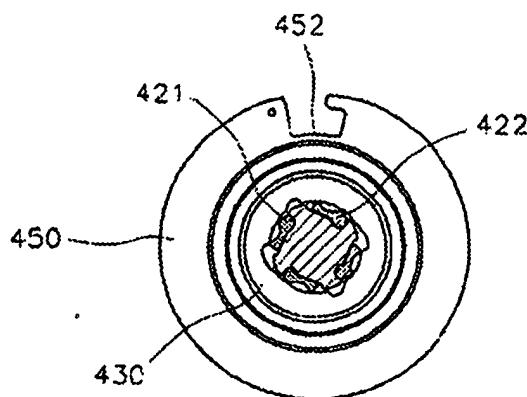


Figure 9A above depicts a schematic view of the speed-change controlling portion of the invention in a low-speed state, in which “both the first and second pawls 421, 422 are outside the grooves 431, 432 of the pawl-controlling ring 430” (col. 3, ll. 38-40; col. 5, ll. 35-37).

9. Figure 9B of the ‘711 Patent is reproduced below:

FIG. 9B

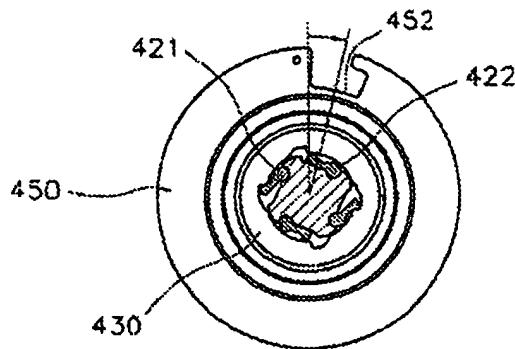


Figure 9B above depicts a schematic view of the speed-change controlling portion of the invention in a mid-speed state, in which “the first pawl 421 locates to the sloping groove 431 [of the pawl-controlling ring 430] and protrudes outward” (col. 3, ll. 42-44; col. 5, ll. 58-59).

10. Figure 9C of the '711 Patent is reproduced below:

FIG. 9C

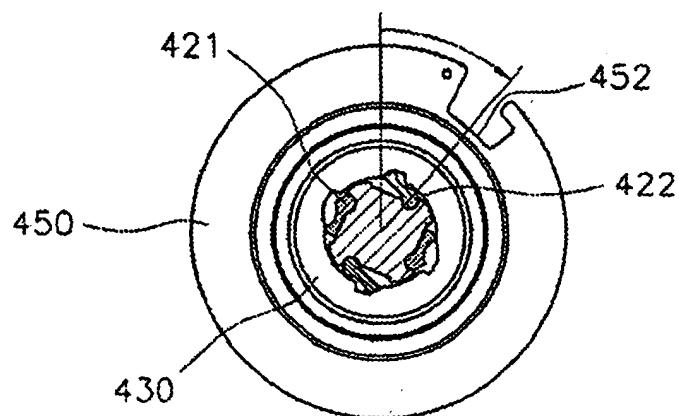


Figure 9C above depicts a schematic view of the speed-change controlling portion of the invention in a high-speed state, in which “the first pawl 421 moves toward the inner position of the pawl-positioning portion 411 of the hub shaft 410, and the second pawl 422 is located to the angular groove 432 and protrudes outward” (col. 3, ll. 45-47; col. 6, ll. 33-37).

#### PRINCIPLE OF LAW

See “Principal of Law” section in Rejection X above.

## ANALYSIS

With respect to claim 22, the Patent Owner's position is that:

"[w]hile the explicit disclosure of [the '711 Patent] may illustrate an embodiment wherein the entirety of the recited elements are in the recited locations, one having ordinary skill in the art would readily understand that minor variations on the illustrated embodiments are also within the scope of the invention and were within the inventor's possession at the time the application was filed.

(PO App. Br. 30)

We cannot agree. First, the differences have not been shown to be "minor." Second, the Patent Owner's argument that compliance with the written description requirement may be shown by resolving differences between the original disclosure and the claimed subject matter appears to be based on a misunderstanding of the appropriate standard for written description. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997) ("[D]escription which renders obvious the invention for which an earlier filing date is sought is not sufficient.").

Claim 23, however, stands on different footing. We agree with the Patent Owner that Figures 9A through 9C reasonably convey to one skilled in the relevant art that the inventor had possession of the invention including "a ring-engaging portion adapted to be selectively engageable with the pawl-controlling ring," as recited in claim 23 (PO App. Br. 31; FF 8-10). Specifically, Figures 9A through 9C show that: neither set of pawls are engaged with the pawl-controlling ring; the first set of pawls is engaged with the pawl-controlling ring; and the second set of pawls is engaged with the pawl-controlling ring.

For these reasons, we uphold the Examiner's rejection as to claim 22 but not with respect to claim 23.

REJECTIONS I-III, XII, XIII, & XVI – NAGANO AS A PRINCIPAL  
REFERENCE (CLAIMS 1-8, 11, 13-20, & 22-25)

ISSUES

The Examiner construed the term "pawl-controlling ring" in claim 1 to mean "a circular hollow body" inclusive of Nagano's control member 80 (RAN 3, 17). The Examiner also adopted the Requester's position that the term "pawl-controlling ring" reads on either sleeve 80*i* or 80*j* as shown in Nagano (RAN 2; Req. for Reexamination at 7).

The Patent Owner contends that the Examiner's claim construction is in error (PO App. Br. 7-10).

Thus, the issues arising from these contentions are:

- (6) Does the term "pawl-controlling ring" recited in the claims encompass Nagano's control member 80?
- (7) Does the term "pawl-controlling ring," in the context of the claimed subject matter as a whole, encompass either Nagano's sleeve 80*i* or 80*j*?

## ADDITIONAL FINDINGS OF FACT

11. Figure 1 (Prior Art) of the '711 Patent is reproduced below:

FIG. I  
PRIOR ART

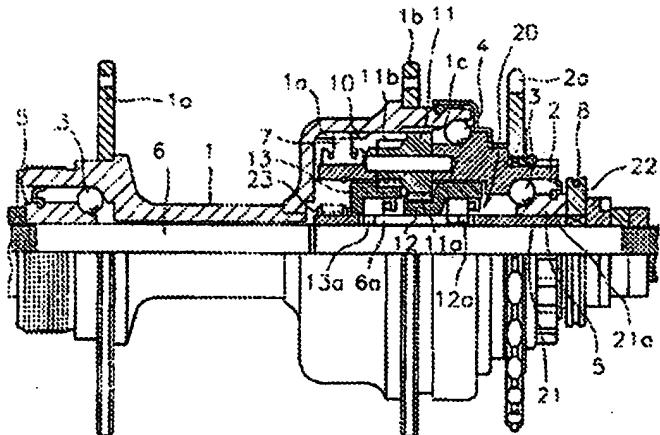
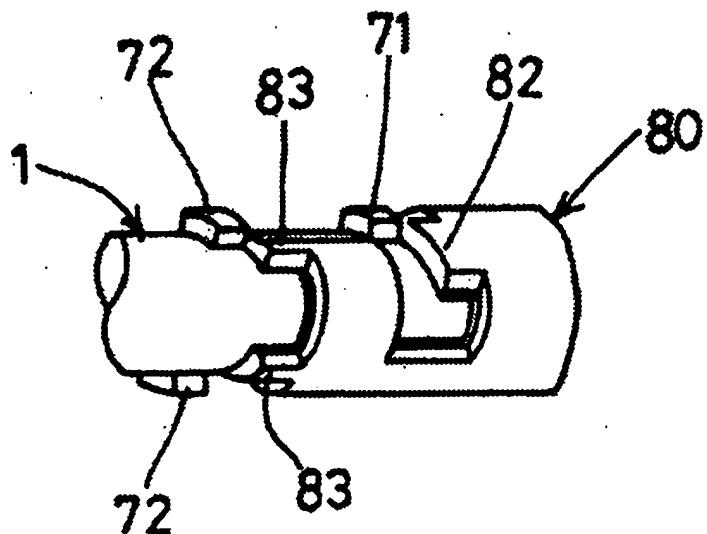


Figure 1 (Prior Art) above of the '711 Patent depicts a prior art bicycle transmission hub including, *inter alia*, controlling sleeve 21 (col. 2, ll. 8-14).

12. It is undisputed that controlling sleeve 21 in Figure 1 (Prior Art) of the '711 Patent is a circular element extending axially along a significant length of the shaft 6 (PO App. Br. 7; PO Reb. Br. 4; RAN 2-3, 17-18).
13. The '711 Patent discloses that the pawl-controlling ring 430 controls the position of the two or more sets of pawls 421, 422 (col. 4, ll. 11-12).

14. Nagano describes a speed-change hub for use in, for example, a bicycle (col. 1, ll. 7-8).
15. Nagano's Figure 2 is reproduced below:

Fig. 2

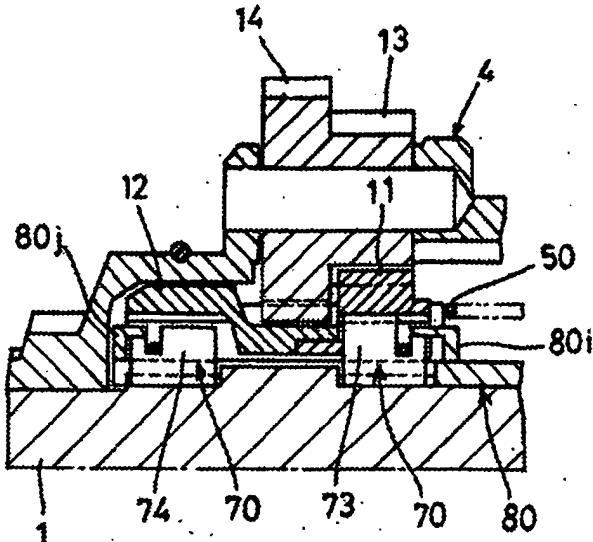


Nagano's Figure 2 above depicts control portions and lock control portions of a control member used in the hub (col. 2, ll. 62-64).

16. Nagano teaches that the "control member 80 has a length extending from one distal end of the fixed shaft 1 to a portion of the shaft 1 carrying the second regulating projection 72" (col. 6, ll. 26-28).

17. Nagano's Figure 20 is reproduced below:

Fig. 20



Nagano's Figure 20 above depicts a partially enlarged front view showing a modified arrangement of the lock control portions (col. 3, ll. 30-31).

18. Nagano teaches that the control of the lock claws 73 and 74 "relative to the sun gears are effected by means of sleeves 80i and 80j provided to control member 80, respectively" (col. 11, ll. 21-28).

#### PRINCIPLES OF LAW

While the PTO is obligated to give claims their broadest reasonable interpretation, "any such construction [must] be '*consistent with the specification*, . . . and . . . claim language should be read in light of the

specification as it would be interpreted by one of ordinary skill in the art.”” *In re Suitco Surface, Inc.*, 603 F.3d 1255, 1259-60 (Fed. Cir. 2010) (citation omitted). Thus, “it would be unreasonable for the PTO to ignore any interpretive guidance afforded by the applicant’s written description.” *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

The specification of a patent is the single best guide in claim construction and is usually dispositive. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005).

## ANALYSIS

Applying the legal principles above, we find that the rejections over Nagano are based on an incorrect interpretation of the term “pawl-controlling ring” recited in claim 1, the sole independent claim. It is undisputed that the ‘711 Patent Specification refers to prior art pawl-controlling members with an elongated circular or cylindrical configuration (i.e., a length that is substantially greater than the diameter) as a “controlling sleeve” (FF 11-12). By contrast, the ‘711 Patent depicts the pawl-controlling member of the invention as having a relatively short axial length and refers to it as a “pawl-controlling ring” (FF 1). These usages of the terms “sleeve” and “ring” to distinguish between the prior art and the invention structures *in the relevant specification* (i.e., the ‘711 Patent Specification) undercuts the Examiner’s position that the term “ring” in claim 1 includes prior art controlling members in the form of a sleeve of the type shown in Figure 1 (Prior Art) of the ‘711 Patent or in Nagano’s Figure 2 (FF 14-16). While the Examiner argues that the common definition of “ring” is “a circular hollow body” (RAN 17), the ‘711 Patent does not use

the term “ring” to be inclusive of the prior art sleeve having a relatively elongated axial structure. In this regard, it is now well-settled that the enlightenment found in the specification takes precedence over extrinsic evidence such as general dictionary definitions. *Phillips* at 1318-19.

We are also unpersuaded by the Examiner’s reliance on Nagano’s sleeve 80*i* or 80*j*. As pointed out by the Patent Owner, Nagano’s sleeve 80*i* or 80*j* controls, at most, individual lock claw 73 or 74 (FF 17, 18). By contrast, claim 1 recites, in relevant part (emphases added):

*at least two sets of pawls* engageable with and releasable from the ratchet-teeth of the sun gears;  
a pawl-controlling ring for controlling the position of *the pawls*  
....

In addition to the plain language of claim 1 reproduced above, the ‘711 Patent Specification also makes it clear to one skilled in the relevant art that the pawl-controlling ring 430 controls both sets of pawls 421, 422 (FF 13). When properly construed in light of the ‘711 Patent Specification, we agree with the Patent Owner (PO App. Br. 9-10) that the recited “pawl-controlling ring” must be capable of controlling the position of both sets of pawls.<sup>7</sup> Here, Nagano’s sleeve 80*i* or 80*j* has not been shown to be “a pawl-controlling ring” that controls two set of pawls, as required in claim 1.

For these reasons, we cannot uphold any of the rejections, which rely on Nagano as teaching a “pawl-controlling ring,” as recited in claim 1.

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<sup>7</sup> The Requester asserts that the Patent Owner took a contrary position during litigation in Europe (Req. Resp. Br. 6). The Requester, however, has not directed us to any documentary evidence to support such an assertion. Accordingly, the Requester’s assertion is mere attorney argument. See, e.g., *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997).

**REJECTIONS IV-VII, XIV & XV – MATSUO OR HUANG AS A  
PRINCIPAL REFERENCE (CLAIMS 1-8, 11-20, & 22-25)**

**ISSUES**

The Examiner relies on the Requester's reasoning at pages 30-43 of the Request for Reexamination (RAN 5). The Requester asserts, *inter alia*, that: (1) Matsuo describes "a pawl-controlling ring" in the form of a sleeve 37, which controls pawls 31 and 32; and (2) Huang discloses a pawl-controlling ring in the form of tube 72, which controls pawls 81 and 82 (Req. for Reexamination at 34).

The Patent Owner contends that, like Nagano, neither Matsuo nor Nagano describes "a pawl-controlling ring for controlling the position of the pawls," as recited in claim 1 (PO App. Br. 23).

Thus, the dispositive issues arising from these contentions are:

(8) Did the Examiner demonstrate that Matsuo describes "a pawl-controlling ring for controlling the position of the pawls," as recited in claim 1?

(9) Did the Examiner demonstrate that Huang describes "a pawl-controlling ring for controlling the position of the pawls," as recited in claim 1?

#### ADDITIONAL FINDINGS OF FACT

19. Matsuo's Figure 1 is reproduced below:

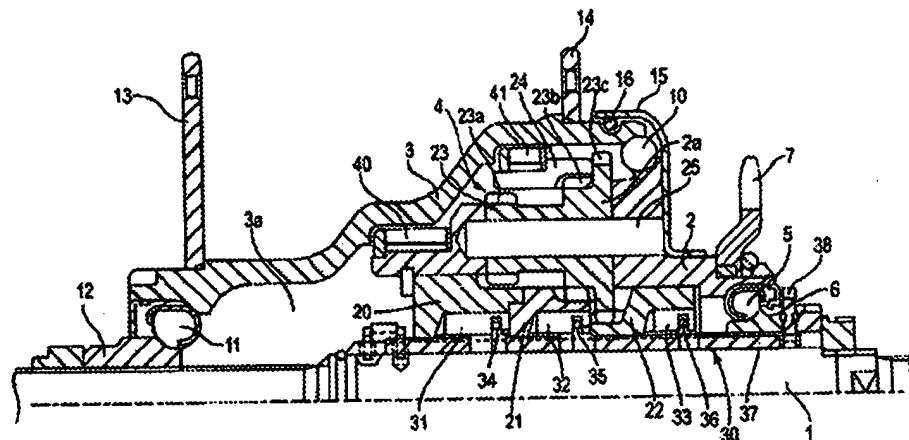


FIG. 1

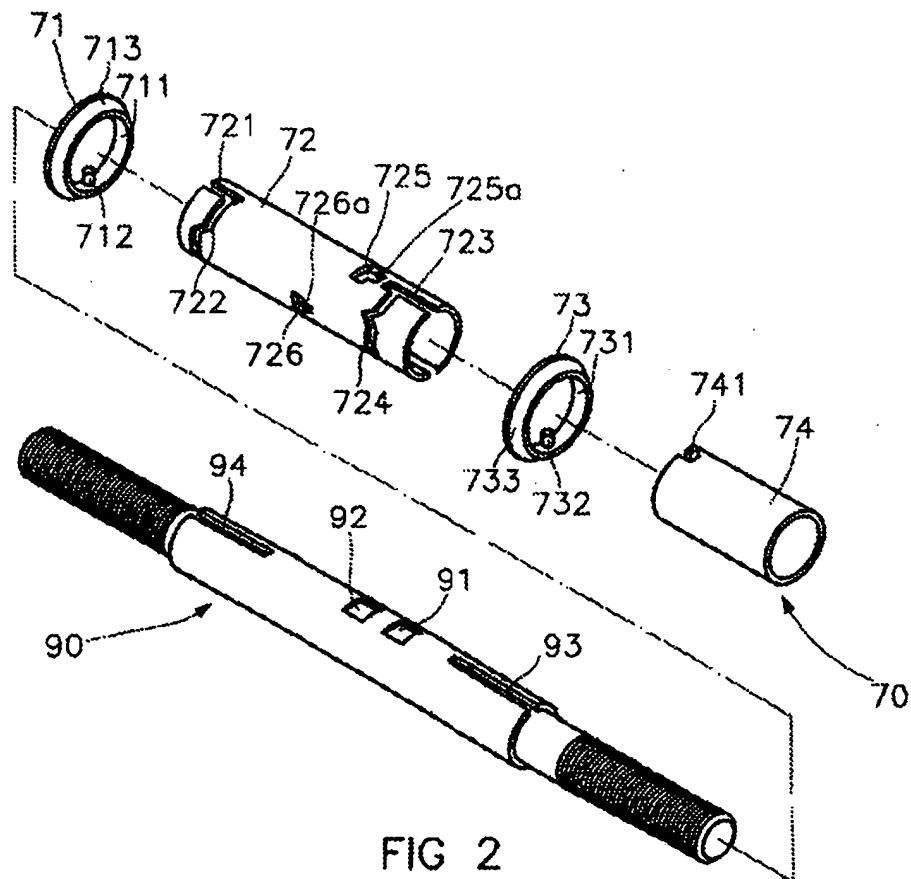
Matsuo's Figure 1 above depicts a cross-sectional view of an internally mounted bicycle transmission including, *inter alia*, a selective clutch mechanism 30 having: (a) a multiple number of pawls 31-33, which are installed in the "inside-circumferential parts" of sun gears 20-22; (b) ring-form wire springs 34-36 used to support pawls 31-33; and (c) a sleeve 37, which is inserted into the outer circumference of a fixed shaft 1 and has a multiple number of engaging grooves formed in its outer circumference (col. 3, ll. 9-11; col. 4, ll. 36-46).

20. Matsuo further describes the operation of the sleeve 37 as follows (col. 4, ll. 46-50):

An operating part (38) is fastened to one end of the sleeve (37), so that the sleeve (37) can be caused to rotate by the operation of this operating part (38).

The coupling of the respective sun gears (2) through (22) to the fixed shaft (1) is controlled by the rotation of the sleeve (37).

21. Huang's Figure 2 is reproduced below:



Huang's Figure 2 above depicts a perspective exploded view of a fixing shaft and control system for a speed-changing transmission hub, in which controlling device 70 comprises a first ring 71, a tube 72, a second ring 73, and a controlling element 74 (col. 1, ll. 40-42, 60-61; col. 2, l. 66 to col. 3, l. 1).

## ANALYSIS

We agree with the Patent Owner that neither the Examiner nor the Requester has demonstrated that Matsuo's sleeve 37 or Huang's tube 72 is a "pawl-controlling ring," as recited in claim 1.

With respect to Matsuo, the Patent Owner's assertion that Matsuo's sleeve 37 "extends for substantially the entire length of the shifting mechanism" is undisputed (PO App. Br. 23; RAN 17-18; FF 19, 20). As discussed above, the '711 Patent Specification informs one skilled in the relevant art that a structure such as Matsuo's sleeve 37 would not be considered a "ring."

Huang's tube 72 is also not a "ring," as that term would have been understood by one skilled in the relevant art given the enlightenment found in the '711 Patent Specification. Like Nagano or Matsuo, Huang's tube 72 has an elongated cylindrical configuration with a significant axial length relative to the diameter (FF 21).

For these reasons, we cannot uphold any of the stated rejections.

## THE REQUESTER'S APPEAL

The Examiner did not enter the proposed rejection of claims 1-8 and 11-15 under 35 U.S.C. § 103(a) as unpatentable over Matsuo in view of Nagano and Rohloff, because the "teachings in Rohloff do not add or clarify anything that is not shown or suggested by Nagano as noted in the rejection proposed by the Examiner" (RAN 10). Additionally, the Examiner did not enter the proposed rejections under 35 U.S.C. § 103(a) of (i) claim 4 as unpatentable over Nagano in view of Huang and (ii) claims 16-19, 20, 22,

24, and 25 over Nagano, because these claims were already rejected as anticipated by Nagano (RAN 10, 16-17).

Under 35 U.S.C. § 315(b)(1), our review of the Requester's appeal is limited to "any final decision favorable to the patentability of any original or proposed amended or new claim of the patent." Here, the Examiner's refusal to enter these proposed rejections is not based on a decision favorable to the patentability of the claims over the cited prior art references, but rather that these claims were already rejected as unpatentable on other grounds.<sup>8</sup> Therefore, the Requester's remedy for relief should have been by way of a timely petition.

We further note that the Examiner's reasoning for not adopting the rejections does not appear to be consistent with the guidance provided by the MPEP. MPEP § 2660(III) states: "It is to be noted that the examiner is not to refuse to adopt a rejection properly proposed by the requester as being cumulative to other rejections applied. Rather, any such proposed rejection must be adopted to preserve parties' appeal rights as to such proposed rejections." This language in the MPEP is consistent with the position that the Examiner's reasoning for not adopting the rejections is, in this instance, petitionable as being "improper," rather than appealable.<sup>9</sup>

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<sup>8</sup> Indeed, the Requester agrees with the rejections that were entered by the Examiner (Req. App. Br. 4, 5).

<sup>9</sup> The Examiner's position appears to be that the Requester's proposed rejections are, in essence, the same as or cumulative to those already made. The non-adopted rejections are based on both Nagano and Matsuo, and thus, appear to also suffer from the same deficiencies discussed *supra* which do not appear to be addressed by the Requester.

For these reasons, we do not reach the merits of the Requester's appeal.

## DECISION

The Examiner's decision to reject:

- I. Claims 1-8 and 13-15 under 35 U.S.C. § 102(b) as anticipated by Nagano is reversed;
- II. Claim 11 under 35 U.S.C. § 103(a) as unpatentable over Nagano is reversed;
- III. Claim 12 under 35 U.S.C. § 103(a) as unpatentable over Nagano in view of Matsuo is reversed;
- IV. Claims 1-7 and 11-15 under 35 U.S.C. § 103(a) as unpatentable over Matsuo in view of Huang and Nagano is reversed;
- V. Claims 1-7, 11, and 13-15 under 35 U.S.C. § 103(a) as unpatentable over Huang in view of Nagano is reversed;
- VI. Claim 12 under 35 U.S.C. § 103(a) as unpatentable over Huang in view of Nagano and Matsuo is reversed;
- VII. Claims 1-8 and 11-15 under 35 U.S.C. § 103(a) as unpatentable over Matsuo in view of Nagano is reversed;
- VIII. Claim 21 under 35 U.S.C. § 112, ¶ 2, as indefinite is reversed;

- IX. Claim 7 under 35 U.S.C. § 112, ¶ 1, as failing to comply with the written description requirement is affirmed;
- X. Claim 7 under 35 U.S.C. § 314(a) as enlarging the scope of the claims of the '711 Patent is reversed;
- XI. Claims 22 and 23 under 35 U.S.C. § 112, ¶ 1, as failing to comply with the written description requirement is affirmed as to claim 22 but reversed as to claim 23;
- XII. Claims 16-20, 24, and 25 under 35 U.S.C. § 102(b) as anticipated by Nagano is reversed;
- XIII. Claim 23 under 35 U.S.C. § 103(a) as unpatentable over Nagano is reversed;
- XIV. Claims 16-20 and 22-25 under 35 U.S.C. § 103(a) as unpatentable over Matsuo in view of Huang and Nagano is reversed;
- XV. Claims 16-20 and 22-25 under 35 U.S.C. § 103(a) as unpatentable over Huang in view of Nagano is reversed; and
- XVI. Claim 22 under 35 U.S.C. § 102(b) as anticipated by Nagano is reversed.

We do not reach the merits of the Requester's appeal.

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Reexamination Control 95/001,051  
Patent 6,478,711 B2

Requests for extensions of time in this *inter partes* reexamination proceeding are governed by 37 C.F.R. §§ 1.956 and 41.77(g).

AFFIRMED-IN-PART & REVERSED-IN-PART.

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